

**REMARKS/ARGUMENTS**

Favorable reconsideration of this application as presently amended and in light of the following discussion is respectfully requested.

Claims 1, 2 and 4-34 are pending in this application. Claim 3 is canceled without prejudice or disclaimer and Claims 1, 4-6, 9-12, 14, 22, 24, 25 and 27-34 are amended by the present amendment.

In the outstanding Office Action, Claims 1-13, 16-18, 20, 21, 24 and 26-34 were rejected under 35 U.S.C. § 102(b) as anticipated by Hayashi et al. (U.S. Patent 5,754,708, herein “Hayashi”); Claim 19 was rejected under 35 U.S.C. § 103(a) as unpatentable over Hayashi and Farrell et al. (U.S. Patent 6,222,642, herein “Farrell”); Claims 22, 23 and 25 were rejected under 35 U.S.C. § 103(a) as unpatentable over Hayashi and Sakano et al. (U.S. Patent 5,473,444, herein “Sakano”); and Claims 14 and 15 were indicated as allowable if rewritten in independent form.

Applicants thank the Examiner for the indication that Claims 14 and 15 include allowable subject matter.

Amended Claims 1, 9, 11, 24, 27, 30 and 32 find support at page 40, line 1 to, page 48, line 24 of the specification, and Figures 34-38, for example. Also, the claims are amended to better correspond to U.S. Claim drafting practice. No new matter is added.

Addressing now the rejection of Claims 1-13, 16-18, 20, 21, 24 and 26-34 under 35 U.S.C. § 102(b) as anticipated by Hayashi, that rejection is respectfully traversed.

Amended Claim 1 is directed to an image processing device that includes a filtering unit that filters an input image with variable frequency characteristics, an edge detection unit that detects a magnitude of an edge appearing in the input image, a degree-of-white-background-likeness detection unit that detects a degree of white-background likeness in respect of a local area of the input image, and an edge-magnitude-conversion unit that

converts the detected magnitude of the edge into a filter factor responsive to the detected degree of white-background likeliness. The filtering unit changes the variable frequency characteristics in response to the filter factor obtained by the edge-magnitude-conversion unit. Independent Claims 9 and 30 include similar features.

Hayashi discloses a character/line area filter circuit 8B, in which output data of a dotted image filter circuit 8A is subjected to strong, medium, and weak edge emphasis and gray level adjusting processing (see column 13, lines 16-23). The character/line area filter circuit 8B includes a selector 96 that selects data, and passes the data to an output control 10 based on a result of the judgment by a character/dotted/picture area judging circuit 4A (see column 13, line 56 to, column 14, line 19, and Figures 10 and 12). Specifically, the character/line area filter circuit 8B subjects the output data from the filter circuit 8A to three edge emphasis, and selects one of three edge-emphasized data based on a type of judged area, and passes the selected data to the output circuit 10.

However, Hayashi fails to teach features recited in the claims. The circuit 8B of Hayashi does not appear to change the values of three edge emphasis (corresponding to variable frequency characteristics) based on the judgment by the area judging circuit 4A. More specifically, Hayashi does not disclose or suggest that the character line area filter circuit 8B changes the values of three edge emphasis based on “... the filter factor ...” as recited in amended Claims 1, 9 and 30. Further, Hayashi also fails to disclose or suggest “... an edge-magnitude-conversion unit configured to convert the detected magnitude of the edge into a filter factor responsive to the detected degree of white-background likeliness ...” as recited in amended Claims 1, 9 and 30.

Further, amended Claim 11 is directed to an image processing device that includes, *inter alia*, a degree-of-white-background-likeness detection unit that detects a concentration of white pixels in a binary image obtained by binarizing an input multi-level image. The

degree-of-white-background-likeness detection unit also detects a degree of white-background likeliness in respect of a local area of the input multi-level image in response to the detected concentration of white pixels. Independent Claims 24, 27 and 32 include similar features.

Hayashi discloses an area judging circuit 4 that includes gray level judging means 43 that judges a gray level (high, low or medium) of a vicinity of the detecting area (column 9, lines 59-61). The area judging circuit 4 finds an average value of the density of a target pixel and surrounding pixels, and compares the average value with a predetermined threshold to determine whether a block is high, medium, or low gray level (column 9, line 66 to, column 10, line 10, and Figure 6). Hayashi also compares the density of the target pixel with a maximum or minimum density of the surrounding pixels to determine whether the target pixel is a peak pixel or a dip pixel (column 10, lines 23-32). Based on the determined gray level and the determined peak or dip pixels, Hayashi determines a dotted image area (column 10, line 49 to, column 11, line 17, column 11, lines 23-27, and Figures 8 and 9). However, Hayashi does not disclose or suggest that the area judging circuit 4 detects a concentration of white pixels, in contrast to claimed features. More specifically, Hayashi does not disclose or suggest “a degree-of-white-background-likeness detection unit configured to detect a concentration of white pixels in a binary image obtained by binarizing an input multi-level image, and to detect a degree of white-background likeliness in respect of a local area of the input multi-level image in response to the detected concentration of white pixels ...” as recited in amended Claims 11, 24, 27 and 32.

Accordingly, it is respectfully submitted that independent Claims 1, 9, 11, 24, 27, 30 and 32 and each of the claims depending therefrom define over Hayashi.

Addressing now the rejection of Claim 19 under 35 U.S.C. § 103(a) as unpatentable over Hayashi and Farrell, that rejection is respectfully traversed.

Claim 19 depends on Claim 11, which as discussed above defines over Hayashi.

Further, Farrell also does not disclose or suggest the degree-of-white-background-likeness detection unit as recited in amended Claim 11.

Because neither Hayashi nor Farrell discloses or suggests the degree-of-white-background-likeness detection unit as recited in amended Claim 11, the combined teachings of these cited references do not render obvious the image processing device as recited in amended Claim 11.

Accordingly, it is respectfully requested this rejection be withdrawn.

Addressing now the rejection of Claims 22, 23 and 25 under 35 U.S.C. § 103(a) as unpatentable over Hayashi and Sakano, that rejection is respectfully traversed.

Claims 22 and 23 depend on Claim 11, which as discussed above defines over Hayashi. Further, Sakano also does not disclose or suggest the degree-of-white-background-likeness detection unit as recited in amended Claim 11.

Because neither Hayashi nor Sakano discloses or suggests the degree-of-white-background-likeness detection unit as recited in amended Claim 11, the combined teachings of these cited references do not render obvious the image processing device as recited in amended Claim 11.

Claim 25 depends on Claim 24, which as discussed above defines over Hayashi. Further, Sakano also does not disclose or suggest the area detection unit as recited in amended Claim 24.

Because neither Hayashi nor Sakano discloses or suggests the area detection unit as recited in amended Claim 24, the combined teachings of these cited references do not render obvious the image processing device as recited in amended Claim 24.

Accordingly, it is respectfully requested this rejection be withdrawn.

In view of the amendments and discussions presented above, Applicants respectfully submit that the present application is in condition for allowance, and an early action favorable to that effect is earnestly solicited.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,  
MAIER & NEUSTADT, P.C.



---

Gregory J. Maier  
Attorney of Record  
Registration No. 25,599

Surinder Sachar  
Registration No. 34,423

Customer Number  
**22850**

Tel: (703) 413-3000  
Fax: (703) 413 -2220  
(OSMMN 08/03)

GJM/SNS/GS:mda  
I:\ATTY\Gs\19s\197311\AME.DOC